

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :Stuart Serkin et al. Art Unit :3627
Serial No.: 09/401,892 Examiner :B. Jaketic
Filed: September 23, 1999
Title: LOCKED/CROSSED QUOTE HANDLING

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Real Party In Interest

The real party in interest in the above application is The Nasdaq Stock Market, Inc., a corporation existing by virtue of laws of the State of Delaware.

Related Appeals and Interferences

The appellant is not aware of any appeals or interferences related to the above-identified patent application.

Status of Claims

This is an appeal from the decision of the Primary Examiner in an office action dated May 28, 2003, finally rejecting claims 1-22, all of the claims in the above application.

Claims 1-22 were rejected under 35 U.S.C. § 103(a) as obvious over "Self-Regulatory Organizations: Notice of Filing of Proposed Rule Change and Amendment No. 1 to the Proposed Rule Change by National Association of Securities Dealer, Inc." in view of "Biais."

Status of Amendments

Appellant filed a Reply pursuant to 37 C.F.R. 1.116(a) on October 27, 2003. Appellant also filed a Notice of Appeal on October 27, 2003. Appellant received an Advisory Action dated November 13, 2003, in which the Examiner indicated that the proposed amendments of the October 27, 2003 Reply would be entered.

This Appeal Brief is accompanied by a Reply pursuant to 37 C.F.R. 1.116(b) which corrects minor grammatical and typographical errors just discovered in the claims. The copy of the claim attached to this brief reflects entry of this Reply.

In the event the Reply is not entered, it does not affect materially the discussion regarding the patentability of the claims over the prior art.

Summary of the Invention

Background

This invention relates to trading systems particularly financial trading systems. Electronic equity markets, such as The Nasdaq Stock Market[®] collect, aggregate and display pre-trade information to market participants. In the Nasdaq Stock Market, for example, pre-trade information takes the form of a quote that represents a single (or an aggregate of same-priced) principal or agency orders. A market such as the Nasdaq Stock Market provides trading platforms through which market participants may access liquidity indicated in the marketplace. On occasion, a market participant will enter a quote that locks or crosses another quote in the market. Locked/crossed markets are not desirable for maintaining orderly markets. (*Appellant's specification page 1, lines 3-30*).

Appellant's Invention

Appellant provides techniques for handling quotes in an electronic market that, if entered, would lock or cross other quotes in the market. A feature of this technique is to format the quote as a marketable limit order and route the formatted order to a market participant whose quote was locked or crossed. (*Appellant's specification page 1, lines 18-23*).

The lock/cross techniques prevent quotes that would lock/cross the market from being displayed. Rather, the lock/cross techniques formats the quote as a marketable limit

order and enters the reformatted order as a non-directed Liability Order for execution in time priority. In a locked market situation the order is routed to the Quoting Market Participant(s) next in queue whom would be locked, and the order is executed at the price of the locking quotes/orders. For crossed market, the crossing order is entered and routed to the next Quoting Market Participants in queue, and the order will be executed at the price of the displayed quote that would have been crossed. (Appellant's specification on page 2, lines 5-15).

References to the Specification

FIG. 1 shows an electronic market 10 that includes client systems 12 that access a central quote/order collector facility 20. The quote/order collector facility 25 collects pre-trade information in the form of quotes or orders. Entering quotes are limited to registered market makers 12b and ECNs 12c and possible UTP Exchanges 12d. (Appellant's specification page 4 line 14 to page 5 lines 9-29.)

FIG. 7 shows a lock/cross manager 26f process that executes on the server computers of the order collector facility. If a Quoting Market Participant enters a quote 132 that would lock or cross the market 134, the lock/cross manager 26f will not display the quote as a quote, but instead the lock/cross manager 26f formats the quote as a marketable limit order 136. The lock/cross manager 26f enters the reformatted "marketable limit order" into the order collector facility 25 as a non-directed Liability Order for execution in time priority. In a locked market situation 137, the orders will be routed 138 to the Quoting Market Participant(s) next in queue whom would be locked, and the order will be executed 140 at the price of the

locking quotes/orders. For crossed market situations 137, the crossing order will be entered 142 into the system and routed to the next Quoting Market Participants in queue, and the order will be executed at the price of the displayed quote that would have been crossed. Once the lock/cross is cleared, if the Quoting Market Participant's order is not completely filled 146, the lock/cross manager 26f will reformat the remainder of the order and cause it to be displayed 148 as a quote on behalf of the entering Quoting Market Participants. If the market moves and the order no longer is locking/crossing, the lock/cross manager 26f will return the order and format it as a quote for display in system 20.

If the market is locked or crossed at the opening, system 20 will attempt to clear out the locked and/or crossed quotes, and then will begin processing market and marketable limit orders that are in queue.

Issue

The issue to be decided on appeal is:

Did the Examiner properly reject claims 1-22 under 35 U.S.C. 103(a), as being obvious over "Self-Regulatory Organizations: Notice of Filing of Proposed Rule Change and Amendment No. 1 to the Proposed Rule Change by National Association of Securities Dealer, Inc." in view of "Biais?"

Grouping of Claims

Claims 1-22 do not stand or fall together. Appellant's claims will be argued in separate groupings as defined below.

Group I has claims 1, 9 and 10;

Group II has claims 2, 11 and 20;

Group III has claims 3, 5, 12 and 13;

Group IV has claims 4, 6 and 14;

Group V has claims 7 and 15;

Group VI has claims 8 and 16;

Group VII is claim 17;

Group VIII has claims 18 and 19;

Group IX has claims 20 and 21.

Argument

The Examiner has failed to establish a case of prima facie obviousness under 35 U.S.C. 103(a) of claims 1-22, as being obvious "Self-Regulatory Organizations: Notice of Filing of Proposed Rule Change and Amendment No. 1 to the Proposed Rule Change by National Association of Securities Dealer, Inc. in view of Biavis"

Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

"It is well established that there must be some logical reason apparent from the evidence or record to justify combination or modification of references. *In re Regal*, 526 F.2d 1399 188, U.S.P.Q.2d 136 (C.C.P.A. 1975). In addition, even if all of the elements of claims are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill in the art would have been prompted to combine the teachings of the references to arrive at the claimed invention. *Id.* Even if the cited references show

the various elements suggested by the Examiner in order to support a conclusion that it would have been obvious to combine the cited references, the references must either expressly or impliedly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why one skilled in the art would have found the claimed invention obvious in light of the teachings of the references. *Ex Parte Clapp*, 227 U.S.P.Q.2d 972, 973 (Board. Pat. App. & Inf. 1985)."

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).

"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the

combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

Discussion

Appellant provides a lock/cross manager process that prevents a quote that would lock or cross a market to be displayed, while at the same time keeping the quote in the market as a source of additional liquidity by reformatting the locking/crossing quote as a marketable limit order. In some embodiments the process enters the reformatted order as a non-directed Liability Order for execution in time priority.

Group I (claims 1, 9 and 10)

Appellant's claim 1 is representative of this group. Claim 1 is directed to a method of handling quotes in an electronic market. Specifically the method pertains to handling a quote that would, if entered, lock or cross other quotes in the market. Claim 1 recites formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed.

Claim 1 is not obvious over "Self-Regulatory Organizations: Notice of Filing of Proposed Rule Change and Amendment No. 1 to the Proposed Rule Change by National Association of Securities

Dealer, Inc." (hereinafter "Federal Register") in view of "Biais.

Appellant contends that assuming it is suggested to modify Federal Register by combining it with the teachings of Biais, the combined references neither describe nor suggest the claimed invention. For instance, neither the Federal Register nor Biais describe or suggests formatting the quote as a marketable limit order and routing the order to a market participant whose quote was locked or crossed, as recited in claim 1.

The Federal Register describes sending a "Trade-or-Move Message" by a market participant. The recipient of a Trade-or-Move message either must "fill in full" the Trade-or-Move message (i.e., for the full quote size of the crossing or locking quote) or move the quote out of the way (i.e., move the price either up if an offer or down if a bid by 1 quotation increment). Neither of these events, i.e., trading in full or moving the quote suggest to "formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed."

The examiner concedes that Federal Register does not teach formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed (*Final Office Action* page 2). The examiner relies on Biais as "disclosing the step of formatting quotes as limit orders."

Appellant contends that Biais has no such teaching. Biais states, in part:

Market orders for a larger amount than the depth available at the quotes are not fully executed. Rather they are partially

executed at the best price in the book,
while the remainder of the order is
converted into a limit order at that price.
(Biais, page 2, second full paragraph)

Biais discloses converting market orders that exceed the depth available for quotes. In Biais, the depth available for quotes is a trigger point for limiting the amount of market orders to convert to fully executed orders and the market orders beyond the trigger point are converted to limit orders.

Biais recognizes a distinction between quotes, orders and limit orders. Nowhere has Biais disclosed or suggested converting a quote to a market limit order. Thus, in no sense does Biais suggest: "formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed."

The examiner must give plain meanings to words used in Appellant's claim, specification and the prior art. The plain meaning of the limitation "formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed" is not met by a reference that only teaches converting a market order into a limit order, if the market order is for a larger amount than the depth available at the quotes. Based at least on these differences, claim 1 is not obvious over the references.

Appellant further contends that the examiner has not shown any motivation to combine Federal Register with Biais. The examiner contends that:

It therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the step of formatting the quote as a market limit or

liability order in order to perform the step of placing the quote. (Pages 2,3 of final rejection.)

The references do not provide any motivation to combine their respective teachings. Federal Register does not suggest to modify quotes in any fashion. Rather, Federal Register teaches to trade or force a quote out of the way. Biaisi does not even appreciate the problem of lock-crossed markets. Rather, Biaisi is concerned with the interaction of order flow on an order book and in particular the effect of large orders on an order book. Biaisi teaches:

Market orders for a larger amount than the depth available at the quotes are not fully executed while the remainder of the order is converted into a limit order at that price.

Biaisi does not teach to reformat the quote in the cited passage. Rather, the quote remains the same but it is the market order that is converted into a limit order and placed on the order book at the price level. Biaisi does not discuss reformatting of quotes and certainly does not address the problem of handling locked/crossed quotes. Therefore, the references themselves do not supply any motivation to combine their respective teachings in order to modify Federal Register.

The examiner's proffered reasoning is also inadequate to support an obviousness rejection, since neither in the references nor in Appellant's claim 1 would such a motivation "to perform the step of placing the quote" be of any import to the claims or the references. It is not seen how "placing the quote" better serves the process described in Federal Register. Rather, such a combination is an attempt to reconstruct

Appellant's invention with only the benefit of hindsight provided by Appellant and is insufficient to present a prima facie case of obviousness. See *In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992) ("There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from applicant's invention itself").

Appellant's claim 1 is thus distinct over the references since the combination of references neither describes nor suggests "formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed."

Group II (claims 2, 11 and 20)

Claim 11 is representative of this group of claims and is directed to a system for handling quotes in an electronic market. The system includes features of claim 1, as argued above, in the form of a quote formatter that receives the quotes that, if entered, would lock or cross the market and reformats the quotes as a marketable limit orders. Claim 11 also includes a routing process that routes formatted quotes as a marketable limit formatted orders to a market participant whose quote was locked or crossed. Neither of these features is suggested by the references. As was argued above, the references do not suggest reformat of a locking or crossing quote as a marketable limit order.

The examiner already concedes that Federal Register does not suggest reformatting quotes as marketable limit orders. Therefore, it would logically follow that Federal Register also

does not suggest a routing process that routes formatted quotes as a marketable limit formatted orders to a market participant whose quote was locked or crossed.

The examiner contends that Federal Register teaches to route an order to a market participant whose quote was locked or crossed. However, no such teaching exists in Federal Register. What Federal Register teaches is to send a message that results in either moving a quote or filling a quote for the full size of the message. Federal Register does not teach a routing process that routes formatted quotes as a marketable limit formatted orders to a market participant whose quote was locked or crossed.

Group III (claims 3, 5, 12 and 13)

Claims 3 and 5 each further limit claim 1 and claims 12 and 13 each further limit claim 11. The claims differ merely by whether the claim is directed to the situation on detection of a lock or a cross condition.

Claim 3 is representative of this group of claims and recites determining if the order locks the market and, if the order locks the market, routing the formatted order to the market participant next in time whose quote would be locked if the quote is entered in the system.

The references taken together do not suggest routing of formatted orders depending on whether a locked (claims 3 and 12) or crossed (claims 4 and 13) condition exists. The references do not suggest routing of formatted orders, but rather the references teach to place market orders that are reformatted as limit orders on an order book.

Group IV (claims 4, 6 and 14)

Appellant's claim 4 further limits claim 3 by reciting executing the formatted order against the quote at the side of the market that would have been locked, whereas claim 6 recites executing the formatted order against the quote at the side of the market that would have been crossed. Neither reference suggests formatting a quote as a marketable limit order based on the quote locking (or crossing) a market and hence cannot suggest executing the quote at the side of the market that was locked (or crossed).

Based at least on these differences, claims 4 and 6 are not obvious over the references.

Group V (claims 7 and 15)

Appellant's claim 7 is representative of this grouping. Appellant's claim 7 recites determining if the formatted order was filled by execution against the locked or crossed quote.

The examiner provides no basis for rejection of this claim. Nowhere in the rejection does the examiner point out where the references describe or suggest "determining if the formatted order was filled by execution against the locked or crossed quote." Biaisi does not appear to suggest determining if the formatted order was filled by execution against the locked or crossed quote. While Nasdaq does determine locked or crossed market conditions Federal Register (which is describing a proposed change for the Nasdaq Stock Market) Federal Register describes sending a "Trade-or-Move Message" if the market is locked or crossed. A Trade-or-Move message either results in a filling in full the Trade-or-Move message (i.e., for the full quote size of the crossing or locking quote) or moving the quote

out of the way. Accordingly, since Federal Register teaches that the quote is either moved or fully executed it is not suggested to "determine if the formatted order was filled by execution against the locked or crossed quote."

Thus, Federal Register whether taken alone or in combination with Biaisi does not make obvious the features of claim 7.

Group VI (claims 8 and 16)

Appellant's claim 8 is representative of this grouping. Appellant's claim 8 depends on claim 7 and is directed to the situation where the formatted order is not filled (by execution against the quote). Claim 8 recites reformatting the formatted order as a displayable quote on the side of the market of the order.

The examiner provides no basis for rejection of this claim. Nowhere in the rejection does the examiner point out where the references describe or suggest reformatting the formatted order as a displayable quote on the side of the market of the order. Biaisi does not appear to suggest display of orders as quotes at all. While the Nasdaq Stock Market does display quotes and arguably displays orders (agency interest) Federal Register (which is describing a proposed change for the Nasdaq Stock Market) does not suggest a step of "reformatting the formatted order as a displayable quote on the side of the market of the order." The examiner readily admits that the initial formatting of the quote into a marketable limit order is not suggested by Federal Register and therefore there cannot be any basis for Federal Register to suggest "reformatting the formatted order as

a displayable quote on the side of the market of the order," as recited in Appellant's claims.

Thus, Federal Register whether taken alone or in combination with Biaisi does not make obvious the features of claim 7.

Group VII (claim 17)

Appellant's claim 17 is directed to a computer program product and includes instructions to format the quote as a marketable liability order and route the order to a market participant whose quote was locked or crossed for execution in time priority.

Claim 17 distinguishes for the reasons given in Claim 1 and further by requiring formatting the quote as a marketable liability order. While Federal Register (reporting on proposed changes to the Nasdaq Stock Market) certainly teaches marketable liability orders, the examiner concedes that formatting is not present in Federal Register. It is not seen where Biaisi teaches formatting liability orders and thus it would not be suggested to rely on Biaisi for supplying the missing formatting teaching in Federal Register.

Group VIII (claims 18 and 19)

Appellant's claim 18 further limits claim 17 and is representative of this group of claims. Claim 17 includes instructions to route the market liability order to the market participant next in queue whom would be locked and execute the order at the price of the locked quote. These features are not taught by the references.

Group IX (claims 20, 21)

Appellant's claim 20 further limits claim 17 and is representative of this group of claims. Claim 20 re-format the order as a displayable quote on the side of the market of the order.

The examiner provides no basis for rejection of this claim. Nowhere in the rejection does the examiner point out where the references describe or suggest reformatting the formatted order as a displayable quote on the side of the market of the order. Biaisi does not appear to suggest display of orders as quotes at all. Arguable, while the Nasdaq Stock Market does display quotes and arguably displays orders (agency interest) Federal Register (which is describing a proposed change for the Nasdaq Stock Market) does not suggest a step of "reformatting the formatted order as a displayable quote on the side of the market of the order." The examiner readily admits that Federal Register does not suggest the initial formatting of the quote into a marketable liability order. Therefore, it would logically follow that the Federal Register also does not suggest "reformatting the formatted order as a displayable quote on the side of the market of the order," as recited in Appellant's claims.

Thus, Federal Register whether taken alone or in combination with Biaisi does not make obvious the features of claim 20.

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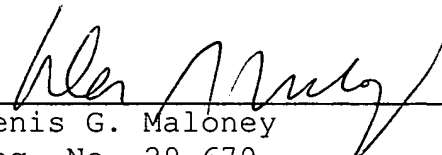
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Conclusion

Appellant submits that claims 1-22 are allowable over Federal Register and Biaais. Therefore, the Examiner erred in rejecting Appellant's claims and should be reversed.

Respectfully submitted,

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Appendix of Claims

1. A method of handling quotes in an electronic market that, if entered, would lock or cross other quotes in the market comprises:

formatting the quote as a marketable limit order and routing the formatted order to a market participant whose quote was locked or crossed.

2. The method of claim 1 further comprising detecting if a market participant enters an order which will lock or cross the market.

3. The method of claim 1 further comprising determining if the order locks the market and, if the order locks the market, routing further comprises:

routing the formatted order to the market participant next in time whose quote would be locked if the quote is entered in the system.

4. The method of claim 3 further comprising;
executing the formatted order against the quote at the side of the market that would have been locked.

5. The method of claim 1 further comprising determining if the order crosses the market and, if the order crosses the market, routing further comprises:

routing the formatted order to the market participant next in time whose quote would be crossed if the quote is entered in the system.

6. The method of claim 3 further comprising executing the formatted order against the quote at the side of the market that would have been crossed.

7. The method of claim 1 further comprising:
determining if the formatted order was filled by execution against the locked or crossed quote.

8. The method of claim 7 wherein if the formatted order was not filled, the method further comprises:
reformatting the formatted order as a displayable quote on the side of the market of the order.

9. The method of claim 1 wherein formatting the quote, formats the quote as the marketable limit order that is entered into the execution system as a marketable liability order.

10. The method of claim 1 wherein if quotes are entered in the electronic market at the opening of the market that would lock or cross other quotes in the market, using the method to clear out from the market the quotes that lock or cross the market before processing orders and quotes at the opening of the market.

11. A system for handling quotes in an electronic market comprises:

a lock/cross quote detector which determines whether a quote which is entered into the market system would lock or cross other quotes in the market system;

a quote formatter that receives the quote that, if entered, would lock or cross the market and reformats the quote as a marketable limit order;

a routing process that routes the formatted quote as a marketable limit formatted order to a market participant whose quote was locked or crossed.

12. The system of claim 11 wherein the routing process routes the formatted order to the market participant next in time whose quote would be crossed if the quote is entered into the system.

13. The system of claim 11 wherein the routing process routes the formatted order to the market participant next in time whose quote would be locked if the quote is entered into the system.

14. The system of claim 11 further comprising an execution process that executes the formatted order against the quote at the side of the market that would have been locked or crossed.

15. The system of claim 11 further comprising:
a process to determine if the formatted quote was filled by execution against the locked or crossed quote.

16. The system of claim 15 wherein if the formatted order was not filled, the determining process, reformats the formatted order as a displayable quote on the side of the market of the order.

17. A computer program product residing on a computer readable medium for handling quotes in an electronic market comprises instructions to:

determine that a quote if entered, would lock or cross other quotes in the market; and

format the quote as a marketable liability order and route the order to a market participant whose quote was locked or crossed for execution in time priority.

18. The computer program product of claim 17 further comprising for a locked market instructions to:

route the market liability order to the market participant next in queue whom would be locked; and

execute the order at the price of the locked quote.

19. The computer program product of claim 17 further comprising for a crossed market instructions to:

route the order to the next market participants in queue; and

execute the order at the price of the displayed quote that was crossed.

20. The computer program product of claim 17 wherein if the order was not filled, the product further comprises instructions to:

re-format the order as a displayable quote on the side of the market of the order.

21. The computer program product of claim 17 wherein instructions to re-format the quote, formats the quote as a

marketable limit order that is entered into the execution system as the marketable liability order.

22. The computer program product of claim 17 wherein the program is executed at opening of the market to clear out quotes that lock or cross the market before processing orders and quotes at the opening of the market.